

Table Continued

| Author, date and country | Patient group | Study type (level of evidence) | Outcomes | Key results | Study weaknesses |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------|---------------------------------|------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| Blackmon <i>et al</i> , ⁹ 2000 USA | 418 patients with clinically equivocal ASBO given amidotrizoate. Obvious surgical candidates excluded. | Observational | Incidence of amidotrizoate reaching caecum in 6 hours. Need for operation | Contrast reached the colon within 6 hours in 68% of patients, and 88% of these were successfully managed non-operatively. The positive predictive value (48%), negative predictive value (87%), sensitivity (64%) and specificity (78%). Contrast reached the colon within 24 h in 70% – all were successfully treated non-operatively. | Retrospective |
| Chen <i>et al</i> , ¹⁰ 1998 Taiwan | 161 patients with ASBO without clinical evidence of strangulation or gangrene given amidotrizoate | Observational | Passage of contrast into caecum on abdominal x ray at 4, 8, 16, 24 hours post amidotrizoate. Need for operation | Contrast medium failed to reach the colon within 24 h in 49 patients (30 per cent). 47 of these had operations. Appearance of contrast in colon within 24 hours as indicator for non-operative treatment: Sensitivity 98%, specificity 100%, accuracy 99%, positive predictive value 100% and negative predictive value 96% | No control |
| Assalia <i>et al</i> , ¹¹ 1994 Israel | 117 patient episodes of ASBO given amidotrizoate | Randomised controlled trial | Time to resolution of partial small bowel obstruction, need for operation, complications and hospital stay. | Mean time to first stool was 23.3 hours in the control group and 6.2 hours in the amidotrizoate group (significant). 21% of the control group required operation v 10% in the gastrografin group ($p = 0.12$). Mean hospital stay for the patients who responded to conservative treatment was 4.4 days for control group and 2.2 days amidotrizoate group. | No blinding |
| Stordahl <i>et al</i> , ¹² 1988 Norway | 50 patients with possible ASBO given either oral amidotrizoate or Omnipaque | Randomised double blinded trial | Passage of contrast into caecum. Resolution of obstruction | 23 patients out of 28 with small bowel obstruction due to peritoneal adhesions resolved with conservative measures with no significant difference between the two media | |
| Anderson & Humphrey, ¹³ 1997 USA | 64 patients who presented clinically with ASBO. 23 received oral barium, 41 had plain abdominal radiography. | Randomised controlled trial | Time to resolution of the symptoms or operation, length of hospital stay. | No difference in proportions having operations. Barium contrast studies had a sensitivity of 100% for diagnosing complete obstruction v 82% for serial plain radiographs. Time to operation was 8.2 hours in the contrast group v 12.4 hours in the plain radiograph group (NS). Length of hospital stay similar. | Criteria for SBFT diagnosis of SBO unclear |

6 Aulin A, Sales JP, Bachar S, *et al*. Telebrix Gastro in the management of adhesive small bowel obstruction. *Gastroenterol Clin Biol* 2005;**29**:501–4.

7 Roadley G, Cranshaw I, Young M, *et al*. Role of Gastrografin in assigning patients to a non-operative course in adhesive small bowel obstruction. *ANZ J Surg* 2004;**74**:830–2.

8 Choi HK, Chu KW, Law WL. Therapeutic value of gastrografin in adhesive small bowel obstruction after unsuccessful conservative treatment: a prospective randomized trial. *Ann Surg* 2002;**236**:1–6.

9 Blackmon S, Lucius C, Wilson JP, *et al*. The use of water-soluble contrast in evaluating clinically equivocal small bowel obstruction. *Am Surg* 2000;**66**:238–42.

10 Chen SC, Lin FY, Lee PH, *et al*. Water-soluble contrast study predicts the need for early surgery in adhesive small bowel obstruction. *Br J Surg* 1998;**85**:1692–4.

11 Assalia A, Schein M, Kopelman D, *et al*. Therapeutic effect of oral Gastrografin in adhesive, partial small-bowel obstruction: a prospective randomized trial. *Surgery* 1994;**115**:433–7.

12 Stordahl A, Laerum F, Gjolberg T, *et al*. Water-soluble contrast media in radiography of small bowel obstruction. Comparison of ionic and non-ionic contrast media. *Acta Radiol* 1988;**29**:53–6.

13 Anderson CA, Humphrey WT. Contrast radiography in small bowel obstruction: a prospective, randomized trial. *Mil Med* 1997;**162**:749–52.

Sudden onset single floater symptom in one eye: is urgent dilated fundal examination by an ophthalmologist warranted?

Report by Jaheed Khan, *Clinical Research Fellow*
Checked by Genevieve Larkin

A shortcut review was carried out to establish whether patients with only symptom of a sudden onset uniocular floater warrant urgent referral to an ophthalmologist for specialist retinal examination to exclude retinal tears or detachment. Altogether 316 papers were found using the reported search, of which two presented the best evidence to answer the clinical question. The clinical bottom line is that patients who complain of a sudden onset single floater with no photopsia or change in visual acuity

Table 1 Summary of the two papers found

| Author, date, and country | Patient group | Study type (level of evidence) | Outcomes | Key results | Study weaknesses |
|---------------------------|---------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Diamond JP, 1992, UK | 170 patients; 147 with unilateral symptoms of flashes and floaters | Prospective case study | Patients classified into benign vitreo-retinal disease or potentially sight threatening disease after fundal examination | 75.9% incidence of benign vitreo-retinal disease | Small number of patients in the study and with symptom of isolated single floater |
| | 23 with bilateral symptoms attending eye casualty over 6 months | | | Sight threatening condition found in 41 patients (24.5%), the most important being a retinal break (16.5%) | One junior investigator examining patients with potential to miss retinal breaks. |
| | 27 with symptoms of isolated single floater | | | Only one patient of the 27 with single floater symptomatology had a retinal break (3.7%) No significant difference in incidence of retinal breaks in patients with single floater v asymptomatic fellow eyes (3.7% v 1.4%) | Symptoms can vary according to patient history, especially in the elderly |
| Byer NE, 1994, USA | 350 patients with diagnosis of acute posterior vitreous detachment examined between 1975 and 1987 | Prospective case study | Correlate symptomatology and prognosis of posterior vitreous detachment | Of 163 patients who had 1–2 floaters (without flashing lights) as their presenting symptom, 12 (7.3%) went on to develop retinal tears | Study starts with a cohort of patients with posterior vitreous detachment and not patients with the symptom of an isolated floater |
| | | | | Of 31 eyes that had retinal tears on initial examination, 4 (13%) had a single floater and no light flashes as their initial symptom | No subgroup analysis to elucidate whether single floater v multiple floater groups differ in their rate of retinal tear development Relying on subjective history of patient with recall over the previous 3 months. No control group with fellow asymptomatic eyes reported |

in one eye should merit urgent referral to an ophthalmologist for a detailed fundal examination.

Clinical scenario

A 60 year old lady presents to the emergency department complaining of a 3 day history of a sudden onset single floater in her left eye with no history of flashing lights or other visual problems. Her visual acuity is 6/6 aided in each eye. Dilated fundal examination of her retina with a direct ophthalmoscope is unable to exclude peripheral retinal pathology. You wonder whether she needs specialist dilated fundal examination by an ophthalmologist to exclude a retinal tear or detachment.

Three part question

In [patients with an isolated floater, no photopsia, and no change in visual acuity] is [dilated fundoscopy by an ophthalmologist] required to [exclude retinal tear/detachment or other significant pathology]?

Search strategy

Medline search from 1951–08/2005 using the Dialog Datastar interface inputting the following search terms: {(vitreous detachment OR photopsia OR flashing lights OR light flashes OR flashes OR floaters OR visual disturbance OR visual acuity OR vision, low) AND (ophthalmoscopy OR mydriasis OR specialism OR referral OR emergency OR emergencies OR early management) AND (retinal detachment OR retinal perforations OR vitreous hemorrhage OR retinal disease)} limited to papers published in English.

Search outcome

Altogether 361 papers were returned; two papers were found that addressed our particular question.

Comments

The symptom of a sudden onset single floater with or without flashing lights in one eye is a common presentation of posterior vitreous detachment. There is a small risk of retinal breaks associated with this condition. The two studies have highlighted a small risk of retinal break development in patients who have symptoms of a single floater in their vision but do not agree on the recommended management for this group of patients. The timing for development of retinal tears or detachment following posterior vitreous detachment can be variable. As a result there is no consensus as to whether this group of patients can be reviewed safely on a routine outpatient basis.

► CLINICAL BOTTOM LINE

Patients who complain of a sudden onset single floater with no photopsia or change in visual acuity in one eye should merit urgent referral to an ophthalmologist for a detailed fundal examination.

1 **Diamond JP.** When are simple flashes and floaters ocular emergencies? *Eye* 1992;6(Pt 1):102–4.

2 **Byer NE.** Natural history of posterior vitreous detachment with early management as the premier line of defense against retinal detachment. *Ophthalmology* 1994;101(9):1503–13.

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